

ABSTRACT OF THE DISCLOSURE**METHOD AND APPARATUS FOR DETERMINING COMPUTER PROGRAM
FLOWS AUTONOMICALLY USING HARDWARE ASSISTED THREAD STACK
TRACKING AND CATALOGED SYMBOLIC DATA**

A method, apparatus, and computer instructions for determining computer flows autonomically using hardware assisted thread stack and cataloged symbolic data. When a new thread is spawned during execution of a computer program, new thread work area is allocated by the operating system in memory for storage of call stack information for the new thread. Hardware registers are set with values corresponding to the new thread work area. Upon context switch, values of the registers are saved in a context save area for future restoration.

When call stack data is post-processed, the operating system or a device driver copies call stack data from the thread work areas to a consolidated buffer and each thread is mapped to a process. Symbolic data may be obtained based on the process identifier and address of the method/routine that was called/returned in the thread. Corresponding program flow is determined using retrieved symbolic data and call stack data.